

Lesson 1



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E Is for Earth

Two “big ideas” or major concepts provide the framework for this lesson: (a) living things (including humans) depend on resources from the natural environment to survive and (b) plants and animals are interconnected and interdependent components of a natural system.

The World Around Me, a big book with detailed pictures draws students into five different ecosystems found in California. Through guided discussion, students discover the unique features of these ecosystems, how water connects the five ecosystems, and how humans depend on the resources from these ecosystems to

survive. Students also begin creating individual books to be used in the other lessons in this unit.

The World Around Me and *E Is for Earth* books help students follow words from left to right and understand and follow one- and two-part oral directions. Related discussions

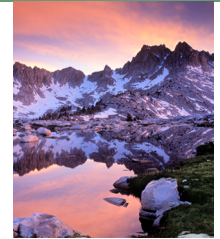
framed by inquiry questions help students describe places and things, while creating individual books allows them to see their ideas in print. Students’ participation in concept mapping helps them recognize the connections within and between the parts of an ecosystem.

Learning Objective

List different habitats (ecosystems) that are found in mountains, rivers, oceans, valleys, deserts, and in their local area.

Name some of the plants and animals that live in their local area.

Identify resources (goods and ecosystem services) that people use in everyday life (e.g., food, air, water, clothing).



California is comprised of the five environments being studied—mountains, rivers, valleys, oceans, and deserts. Examining the local area students experience on a daily basis provides an opportunity for firsthand exploration of the characteristics of at least one of these ecosystems. Such exploration brings a realization of how humans and communities, like organisms, depend on the ecosystem(s) in the local area to meet basic needs.

Water is found in all the ecosystems and serves as a connector between the ecosystems and, sometimes, between the parts of an ecosystem. The form, movement, force, and amount of water, however, differ from one ecosystem to another. On mountain summits, water is often in the form of snow. As the snow melts, water flows rapidly down the sides of the mountains, sometimes forming waterfalls and forcing movement of rocks. Water flowing through a valley may be in the form of a river; in a desert, water may be almost entirely unseen, existing far underground. Water in the ocean is salty and moves in layers. The form and availability of water plays a major role in the kinds of plants and animals that live in any particular ecosystem.

Background

All living things have basic needs that must be met in order to survive. These basic needs include food, water, and shelter (or protection). Living things depend on natural systems for resources to meet their needs. A healthy ecosystem has enough resources to go around—not all of the organisms compete for the same thing at the same time. Different plants within

an ecosystem grow and flower at different times of the year. Different animals hunt and eat different kinds of food, in different places, at different times of the day. Specific characteristics of different organisms, including their behaviors, allow them to thrive in their natural environment. While organisms within a single ecosystem are tremendously diverse, even more biological diversity exists across ecosystems.

Key Vocabulary

Basic needs: What living things need to stay alive.

Community (ecological): A grouping of different living things found in the same place.

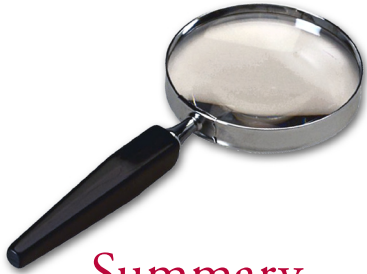
Connector: Something that joins other things together.

Ecosystem: A “system” made up of living and nonliving things that exist together.

Resources: Sources of support for daily life, like fresh water.

Survive: To remain alive.

Toolbox



Summary of Activities

Students discuss *The World Around Me* and begin construction of individual books. Students present their ideas about different parts of an ecosystem and how they are connected in a concept map. They generate a list of basic human needs.



Instructional Support

See Unit Resources, pages 20-21

Prerequisite Knowledge



- Students should be able to participate in a group discussion by relating comments to the discussion topic and listening to what others say.
- Students must be able to speak clearly enough to be understood by others.
- Students need to understand simple oral directions and be able to gather information from pictures.

Advanced Preparation



Create individual books:

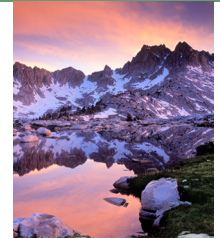
Compile an individual *E Is for Earth* (Lesson 1 Activity Master) book for each student by copying, folding, and stapling the pages provided.

Prepare Activity Masters:

As indicated in the Activity Masters section.

Prepare Visual Aids:

Produce materials as indicated in the Visual Aids section.



Materials Needed



Plant:
One per class

Rock:
One per class

Class Supplies:
Chart paper, marker, pencils

Activity Masters:
See below

Visual Aids



Big Book:
The World Around Me

Duration



Preparation time:
20-30 min.
Instructional time:
55-60 min.

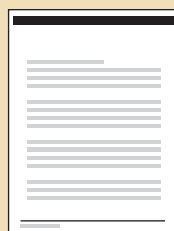


Safety Notes
None

Activity Masters



E Is for Earth
Page 76
One per student



**Ecosystems
Assessment
Checklist**
Page 82
One per class

Procedures

Step 1

Display a rock and a plant (or point to a plant growing outside). Ask students to identify what makes these two things different. After some discussion, lead them to understand that the plant is alive, the rock is not living. Help the students identify some of the characteristics of living things. Ask them to speak in complete sentences as they share their ideas. (*Living things eat; living things make or take in food and water; living things grow; living things make new living things; most living things are made up of parts.*)

Step 2

Ask students, “What do living things need to stay alive?” (*They need water, food, shelter/a place to live.*) Write these words on the board: “water,” “food,” “shelter.” Explain that these three things are called basic needs because, without them, living things can not survive. Explain that people have basic needs just like all other living things. Have each student name one thing they used today that helped them meet a basic need of food, water, or shelter/place to live. (*Note: Clothing may be used as a form of shelter/protection.*)

Step 3

Ask students to think about how living things get what they need to stay alive: How do they get their food, water, and shelter? After some discussion, introduce the word “ecosystem.” Underline the word “system” and explain that a system is made up of parts that work together—like the parts of a bicycle (the wheels, chain, brakes, etc.). Explain that an ecosystem is an environment or place made up of different living and non-living parts that are connected. Also explain that plants and animals need an ecosystem to survive. Go back to the idea of the rock and the plant. The plant can survive only if its surroundings provide what it needs to stay alive. Tell students that we live in a world (Earth) that gives us what we need to stay alive. Have them give some examples of what we get from Earth to stay alive. (*Food, water, air, soil.*)

Step 4

Remind students that an ecosystem is one kind of system—a system that includes living things. Tell them that there are other kinds of systems. For example, a bicycle is a system. A bicycle has different parts that are connected and act together to make the bicycle work. If a wheel falls off, the bicycle will not work because one important piece is missing. If you take the bicycle apart and pile all the pieces on the floor, the bicycle still will not work, because the pieces need to be connected in a way that allows them to work together. The parts working together are what make a system.

Step 5

Show the class the cover of *The World Around Me* (Lesson 1 Visual Aid), and read the title as you point to each of the words. Ask students to predict what the book is about. Once they have made their predictions, inform students that the book shows five different ecosystems in California. Tell them again that an ecosystem is an environment or place, and the living and nonliving things in that environment; the living and nonliving things are connected in ways that support survival (that is, help keep living things alive).

Step 6

Go through the pages of Part 1 of the *The World Around Me*, asking students to look closely at the pictures to learn something about each ecosystem. For each page, read the heading and point to the words as you do so: R Is for River, M Is for Mountain, and so on. Spend time on each page, encouraging the students to talk about the characteristics of each ecosystem (river, mountain, valley, desert, and ocean) rather than just the living and nonliving parts of the ecosystems. For example, when studying the mountain, focus on such concepts as peaks, high areas and low areas, snow, and rocks. For this lesson, the goal is to learn the general characteristics of each ecosystem. Students will learn more about each ecosystem’s animals, plants, and resources used by humans later in the unit. Use the following questions and strategies to stimulate analysis of the pages:



River: What does a river carry? (*Water*) What makes a river different from water in a bucket or bathtub? (*There is a lot more water in a river and it moves or flows.*) What do we call the sides of a river? (*Banks*) Write the word “bank” on the board and talk about the same word having different meanings: “bank” can mean a container that holds money or a slope of land next to a body of water. Show with your hands or arms the shape of a river like the one in the picture.

Mountain: What is the tallest thing you see in this picture? (*Mountain*) What do you see on the high part, or peak, of the mountain? (*Snow*) Why do you think there is more snow on the peak than at the base or bottom of the mountain? (*It is colder on the high land.*) What do you notice about the trees on the mountain? (*No trees grow at the top.*) Show with your hands or arms the shape of a mountain like the one in the picture.

Valley: How is the valley different from the mountain? (*It is low and flat while the mountain is high and has peaks.*) What do you see surrounding the valley? (*Mountains*) Show with your hands or arms the shape of a valley like the one in the picture.

Desert: What do you see in the desert? (*Sand, rocks, bushes.*) Do you see any tall trees? (*No*) What else do you know about a desert? (*It is dry, other answers.*) Show with your hands or arms the shape of a desert like the one in the picture.

Ocean: How would it feel if you were standing in the ocean? (*You would feel wet; you could smell or taste salt; waves would bump against you.*) What else do you know about an ocean? (*It is large, other answers.*) Show with your hands and arms the shape of an ocean like the one in the picture.

Step 7

Go page by page through *The World Around Me - Part 1* again. Tell students to look closely at each ecosystem to see if they can find one thing that appears on every page. Tell students this is a time just for looking, not for talking. Turn the pages of the book very slowly without comment from you or the students. Once the students identify water as being a part of each ecosystem, talk about water as being a connector for all the ecosystems; that is, water from one ecosystem often flows into other ecosystems, and the animals and plants that live in the different ecosystems all need water to survive.

Step 8

With the students’ input, create a simple but large concept map with “The World Around Me” in the center and the different ecosystems as “connectors” to it. Make the concept map on chart paper and display it throughout the unit. (See the example in *The World Around Me - Part 2*.) Use the following questions in developing this concept map:

- What are the five California ecosystems? (*River, mountain, valley, desert, ocean.*)
- What are some of the things that describe each of these ecosystems? (*High, low, snow, sand, rocks, trees, water, grass, sun, other answers.*)

Also draw connecting lines between water and each of the ecosystems. (See the example in *The World Around Me - Part 2*.)

Step 9

Give each student an individual *E Is for Earth* (Lesson 1 Activity Master) book (prepared in advance). Call attention to the title *E Is for Earth* while you point to each word. Ask, “What do you think Earth means?” Help students understand that Earth is where we live and where all the ecosystems are located. Tell students that they will need to listen and follow directions very closely to make a book about California ecosystems. Have the students put their names in the space provided on the cover of their individual books. Then have them turn to the first page. Have them identify the line drawing as a river and have them fill in the letter “R” to complete the sentence, “R Is for River.” Follow this procedure for the additional pages, having them fill in “M Is for Mountain,” “V Is for Valley,” “D Is for Desert,” and “O Is for Ocean.” Collect their individual books when time is up.

Lesson Assessment

Instructions

Description:

Student assessment for this lesson is performance-based and embedded throughout the lesson. The embedded assessment consists primarily of inquiry questions with oral responses. What is being assessed is the student's knowledge and understanding of concepts relating to the EEI Learning Objectives. Their skill in comparing and contrasting is also being assessed. To estimate or determine each student's knowledge, understanding, and skill, all students need to participate actively in the discussion, and their individual responses should be evaluated for accuracy. Students should also be asked to explain some of their ideas to check for any misconceptions. Where appropriate, students should be asked to speak in complete sentences.

Instructions:

Have students describe what they see in the illustrated pictures of *The World Around Me* (Lesson 1 Visual Aid), identifying at least one way in which the ecosystems are alike and one in which they differ. Use the following statements and questions to guide the discussion:

1. How are rivers and oceans alike?
How are they different?
2. How are rivers and valleys alike?
How are they different?
3. How are mountains and valleys alike? How are they different?
4. How are deserts and oceans alike?
How are they different?

If students have trouble with any of these concepts, more examples should be given. Students can also be asked to explain certain concepts to each other.

Suggested Scoring

Use the **Ecosystems Assessment Checklist** (Lesson 1 Activity Master).

Ecosystem Assessment Checklist (Lesson 1 Activity Master)

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